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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,700	09/29/2000	Daryl D. Starr	ALA-010B	9585

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EXAMINER	
BURGESS, BARBARA N	

ART UNIT	PAPER NUMBER
2457	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/675,700	STARR ET AL.	
	Examiner	Art Unit	
	BARBARA BURGESS	2457	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2012*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-7 and 21-33* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-7, 21-33* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to RCE filed 2-28-12. Claims 1-7, 21-33 are presented for further examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 4, 21, 23, 28-31, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elzur (US Patent 6,427,169 B1) in view of Lotito et al. (hereinafter "Lot", US Patent 4,625,081).

As per claim 1, Elzur discloses an interface device for a computer, the interface device comprising:

- a hardware configured to process a transport layer header of a packet received via a first physical network port (column 1, lines 18-21, column 2, lines 65-67, column 3, lines 46-51, 65-67, column 4, lines 6-9; A network controller, at the physical layer, establishes physical communication with the network to send and receive packets to and from the network);

- A memory storing a TCP connection established by the computer and handled by said device (column 4, lines 14-17, 23-25, 34-36, 61-67; The network controller includes hardware such as a receive path. The receive path includes a memory that stores flow tuples that identify characteristics of a particular flow associated with a TCP connection);
- A mechanism for associating said packet with said TCP connection (column 4, lines 14-17, 23-25, 34-36, 61-67).

Elzur does not explicitly disclose:

- to send data from said packet via a second physical network port to a storage unit, thereby avoiding the computer.

However in an analogous art, Lot discloses a packet switcher testing a physical address input port for availability to receive a packet of data. If available, the packet is transferred. The header of the packet determines process identification. Some data is transferred between user processes and buffers in the device, controller, or handler. However, a user process can initiate a transfer of data between source and destination without passing the data through the user's process. For example, a transfer can go from a display record on disk to an operator station with no intervention from user and with direct routing of the data through the system. No processing occurs (column 17, lines 24-27, column 45, lines 20-34, column 67, lines 49-55, column 68, lines 5-17, column 114, lines 37-47).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Lot's send data via a second physical network port to a storage unit, thereby avoiding the computer in Elzur's device enabling data to be transferred without processing.

As per claim 4, Elzur discloses the interface device of claim 1, further comprising a Fibre Channel controller connectable to the storage unit (column 3, lines 46-60).

As per claim 21, Elzur discloses an interface device for a computer, the interface device comprising:

- A receive mechanism that processes a Transmission Control Protocol (TCP) header of a network packet (column 1, lines 18-21, column 2, lines 65-67, column 3, lines 46-51, 65-67, column 4, lines 6-9; A network controller, at the physical layer, establishes physical communication with the network to send and receive packets to and from the network);
- A memory storing a TCP connection established by the computer and handled by said device (column 4, lines 14-17, 23-25, 34-36, 61-67; The network controller includes hardware such as a receive path. The receive path includes a memory that stores flow tuples that identify characteristics of a particular flow associated with a TCP connection);
- A processing mechanism that associates said packet with said TCP connection (column 4, lines 14-17, 23-25, 34-36, 61-67).

Elzur does not explicitly disclose:

- to send data from said packet via a second physical network port to a storage unit, thereby avoiding the computer.

However in an analogous art, Lot discloses a packet switcher testing a physical address input port for availability to receive a packet of data. If available, the packet is transferred. The header of the packet determines process identification. Some data is transferred between user processes and buffers in the device, controller, or handler. However, a user process can initiate a transfer of data between source and destination without passing the data through the user's process. For example, a transfer can go from a display record on disk to an operator station with no intervention from user and with direct routing of the data through the system. No processing occurs (column 17, lines 24-27, column 45, lines 20-34, column 67, lines 49-55, column 68, lines 5-17, column 114, lines 37-47).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Lot's send data via a second physical network port to a storage unit, thereby avoiding the computer in Elzur's device enabling data to be transferred without processing.

As per claim 23, Elzur discloses the interface of claim 21, further comprising a plurality of network ports (column 4, lines 40-45).

As per claim 28, Elzur discloses a method for operating an interface device for a computer, the interface device connectable to a network and a storage unit, the method comprising:

- Receiving, by the interface device from the network, a packet containing data and a Transmission Control Protocol (TCP) header (column 1, lines 18-21, column 2, lines 65-67, column 3, lines 46-51, 65-67, column 4, lines 6-9; A network controller, at the physical layer, establishes physical communication with the network to send and receive packets to and from the network);
- A memory storing a TCP connection established by the computer and handled by said device (column 4, lines 14-17, 23-25, 34-36, 61-67; The network controller includes hardware such as a receive path. The receive path includes a memory that stores flow tuples that identify characteristics of a particular flow associated with a TCP connection);
- Processing, by the interface device, the TCP header (column 2, lines 64-67, column 4, lines 14-17, 23-25, 34-36, 61-67);
- Associating, by the interface device, the packet with the TCP connection (column 4, lines 14-17, 23-25, 34-36, 61-67).

Elzur does not explicitly disclose:

- to send data from said packet via a second physical network port to a storage unit, thereby avoiding the computer.

However in an analogous art, Lot discloses a packet switcher testing a physical address input port for availability to receive a packet of data. If available, the packet is

transferred. The header of the packet determines process identification. Some data is transferred between user processes and buffers in the device, controller, or handler. However, a user process can initiate a transfer of data between source and destination without passing the data through the user's process. For example, a transfer can go from a display record on disk to an operator station with no intervention from user and with direct routing of the data through the system. No processing occurs (column 17, lines 24-27, column 45, lines 20-34, column 67, lines 49-55, column 68, lines 5-17, column 114, lines 37-47).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Lot's send data via a second physical network port to a storage unit, thereby avoiding the computer in Elzur's device enabling data to be transferred without processing.

As per claim 29, Elzur discloses the method of claim 28, further comprising creating, by the computer, the information regarding the TCP connection (column 4, lines 35-50).

As per claim 30, Elzur discloses the method of claim 28, wherein the packet is received via the port and the data is sent to the storage unit via the port (column 4, lines 43-45, column 6, lines 49-50, column 11, lines 28-30).

As per claim 31, Elzur discloses the method of claim 28, wherein the interface device includes first and second network ports, and the packet is received via the first

port and the data is sent to the storage unit via the second port (column 4, lines 43-45, column 6, lines 49-50, column 11, lines 28-30).

As per claim 33, Elzur discloses the method of claim 28, further comprising adding a network protocol header to the data for sending the data to the storage unit (column 7, lines 35-49).

3. Claims 2, 5, 22, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elzur (US Patent 6,427,169 B1) in view of Lotito et al. (hereinafter "Lot", US Patent 4,625,081) and further in view of Day et al. (hereinafter "Day", US Patent 6065096).

As per claims 2 and 22, Elzur, in view of Lot, discloses the interface device of claims 1 and 21.

Elzur, in view of Lot, does not explicitly disclose the interface further comprising a SCSI controller connectable to the storage unit.

However, Day discloses SCSI interface channels attached to disk drives (column 2, lines 40-54, column 5, lines 1-25).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate in Day's interface comprising a SCSI controller in Elzur's device in order to provide for a simple, lower cost RAID controller architecture to enable lower cost and complexity associated with high performance and high reliability storage subsystems.

As per claims 5 and 25, Elzur, in view of Lot, discloses the network interface device of claims 1 and 21.

Elzur, in view of Lot, does not explicitly disclose the interface further comprising a RAID controller connectable to the storage unit.

However, Day discloses a RAID controller that integrates onto a single integrated circuit of a general-purpose processor (column 2, lines 11-25, 55-67).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Day's interface comprising a RAID controller in Elzur's device allowing the disk interface connections and protocols to be more flexibly selected but at the cost of less integration within the circuit.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elzur (US Patent 6,427,169 B1) in view of Lotito et al. (hereinafter "Lot", US Patent 4,625,081) and further in view of Cox et al. (hereinafter "Cox", US Patent 6,172,981 B1).

As per claim 3, Elzur, in view of Lot, does not explicitly discloses the interface device of claim 1, wherein said first network port is connected to a first network and said second network port is connected to a second network.

However, in an analogous art, Cox teaches a switch that provides connection between different networks. The switch transmits data bits received from the source port directly to the destination port. It reads the network layer protocol header in a data frame, and if destined for a station on a different LAN segment, it transmits to the

destination end station (Abstract, column 1, lines 63-67, column 2, lines 1-5, 15-20, column 4, lines 3-8, column 5, lines 3-12).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Cox's ports on first and second networks in Elzur's device avoiding and eliminating delays by forwarding of data without storing the entire frame.

5. Claims 6-7, 24, 26-27, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elzur (US Patent 6,427,169 B1) in view of Lotito et al. (hereinafter "Lot", US Patent 4,625,081) and further in view of Muller et al. (hereinafter "Muller", US Patent 6,453,360 B1).

As per claim 6, Elzur, in view of Lot, does not explicitly discloses the network interface device of claim 1, further comprising a file cache adapted to store said data.

However, the use and advantages for using such cache is well-known to one of ordinary skill in the art as evidenced by Muller (column 56, lines 20-30, column 58, lines 26-30).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Muller's file cache in Elzur's device in order to store non-assembled packets.

As per claim 7, Elzur, in view of Lot, does not explicitly discloses further discloses the network interface device of claim 1, further comprising a file cache adapted to store said data under control of a file system in the host.

However, the use and advantages for using such cache is well-known to one of ordinary skill in the art as evidenced by Muller (column 56, lines 20-30, column 58, lines 26-30).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Muller's file cache in Elzur's device in order to store non-assembled packets.

As per claim 24, Elzur, in view of Lot, does not explicitly discloses the interface device of claim 21, further comprising a file cache adapted to store said data.

However, the use and advantages for using such cache is well-known to one of ordinary skill in the art as evidenced by Muller (column 56, lines 20-30, column 58, lines 26-30).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Muller's file cache in Elzur's device in order to store non-assembled packets.

As per claim 26, Elzur, in view of Lot, does not explicitly discloses the network interface of claim 21, further comprising a file cache adapted to store said data.

However, the use and advantages for using such cache is well-known to one of ordinary skill in the art as evidenced by Muller (column 56, lines 20-30, column 58, lines 26-30).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Muller's file cache in Elzur's device in order to store non-assembled packets.

As per claim 27, Elzur, in view of Lot, does not explicitly discloses the network device of claim 21, further comprising a file cache adapted to store said data under control of a file system in the computer.

However, the use and advantages for using such cache is well-known to one of ordinary skill in the art as evidenced by Muller (column 56, lines 20-30, column 58, lines 26-30).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Muller's file cache in Elzur's device in order to store non-assembled packets.

As per claim 32, Elzur, in view of Lot, does not explicitly discloses the method of claim 28, further comprising storing the data on a file cache of the interface device.

However, the use and advantages for using such cache is well-known to one of ordinary skill in the art as evidenced by Muller (column 56, lines 20-30, column 58, lines 26-30).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Muller's file cache in Elzur's device in order to store non-assembled packets.

Response to Arguments

1. Applicant's arguments have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BARBARA BURGESS whose telephone number is (571)272-3996. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Barbara N Burgess/
Examiner, Art Unit 2457

Barbara N Burgess
Primary Examiner
Art Unit 2457

August 11, 2012

/Barbara N Burgess/

Primary Examiner, Art Unit 2457